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The Rejection Fails to Establish a *Prima Facie* Case of Obviousness

In the most recent Office Action, claims 1-3 and 24 were rejected under 35 U.S.C. §103 as allegedly being obvious over the Sverdlov patent (U.S. Patent No. 6,455,337) in view of Takeishi et al. (JP 09232627)¹. This rejection is respectfully traversed.

In accordance with Section 2143 of the MPEP, three criteria must be met to establish a *prima facie* case of obviousness. First, the cited documents must describe or suggest all of the claim features. Second, there must be some suggestion or motivation, either in the cited documents themselves or in the knowledge generally available to one of ordinary skill in the art, to have combined the teachings of the cited documents. Third, there must have been a reasonable expectation that the documents could have been successfully combined to yield the claimed invention.

The rejection raised in the Action cannot stand at least because no combination of the cited documents describes or suggests the combination of all claim features. Furthermore, the cited documents fail to provide motivation for the proposed modification to combine are absent. Reasonable expectations of successful combinations would also be absent, but it should be sufficient to point out the lack of proper motivation for the proposed combination and the absent features.

All Claim Limitations Are Not Taught or Suggested

For example, claim 1 recites that a semiconductor laser device includes a first cladding layer made of a nitride semiconductor of a first conductivity type and is formed over a substrate, an active layer made of $\text{In}_y\text{Ga}_{1-y}\text{N}$ formed over the first cladding layer, a second cladding layer made of another nitride semiconductor of a second conductivity type formed over the active layer, and an $\text{In}_x\text{Ga}_{1-x}\text{N}$ layer of the first conductivity type is formed between the substrate and the first cladding layer. Claim 1 also recites that in the $\text{In}_x\text{Ga}_{1-x}\text{N}$ and $\text{In}_y\text{Ga}_{1-y}\text{N}$ layers $0 < x < 1$, $0 < y < 1$ and $x \geq y$ in the composition of indium.

In setting forth the rejection of claim 1, the Examiner essentially asserts that the Sverdlov patent describes all claimed features except for the recited $\text{In}_x\text{Ga}_{1-x}\text{N}$ layer of the first conductivity type being formed between the substrate and the first cladding layer, and

¹ In a telephonic conference with the undersigned on June 27, 2005, the Examiner clarified that the reference to "SAKAI, SHIRO" on page 2 of the Office Action was in error, and that the correct citation is "TAKEISHI, HIDEMI et al. (JP 06232627)" (see paper no. 20050627).

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that $0 < x < 1$, $0 < y < 1$ and $x \geq y$ in the composition of In. The Examiner, therefore, relies on the Takeishi et al. document for allegedly teaching the features acknowledged to be missing in the Sverdlov patent. In particular, the Examiner asserts that Takeishi et al. "teaches providing ... $\text{In}_x\text{Ga}_{1-x}\text{N}$ layer of the first conductivity. However, contrary to this allegation by the Examiner, the device of Takeishi et al. utilizes $\text{In}_x\text{Ga}_{1-x}\text{N}$ to form an *undoped active layer*. Furthermore, the Takeishi et al. document is silent with regard to the claimed layer of $\text{In}_x\text{Ga}_{1-x}\text{N}$ of a *first conductivity type formed between the substrate and the first cladding layer*. Accordingly, claim 1 is considered allowable over the cited combination at least because the combination by the Examiner does not teach or suggest all of the features recited in Applicants' claim 1.

No Motivation for the Proposed Combination

In addition to the above, the Applicants respectfully assert that one of ordinary skill in the art would not have been motivated to combine the cited documents as the Examiner contends, and even if one had, one would have been more likely to arrive at something that did not work at all or not in the manner claimed by the present application.

In an attempt to support a *prima facie* case, the Examiner asserts the following with respect to motivation for modifying the Sverdlov device:

[T]he purpose of conductive a specific area and provided to easily grow an indium-containing compound layer like an $\text{In}_x\text{Al}_y\text{Ga}_{1-x-y}\text{N}$ layer, by growing $\text{In}_x\text{Ga}_{1-x}\text{N}$ as a buffer layer so that mole density of indium is easily increased or decreased. (See, page 3, lines 10-13.)

Such teaching, however, is absent from the Sverdlov and Takeishi et al. documents. Moreover, Applicants submit that the Examiner has not presented with any specificity why the claimed combination including the features of an $\text{In}_x\text{Ga}_{1-x}\text{N}$ layer of the first conductivity type being formed between the substrate and the first cladding layer, and that $0 < x < 1$, $0 < y < 1$ and $x \geq y$ in the composition of In, would have been within the knowledge of persons of ordinary skill in the art at the time the invention was made. Accordingly, it is respectfully submitted that the rejection is improper for this additional reason.

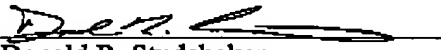
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Conclusion

In view of the deficiencies pointed out above, it is respectfully submitted that the Examiner failed to establish a *prima facie* case of obviousness. Therefore, it is respectfully requested that the rejection be reconsidered and withdrawn, and that claims 1-3 and 24 allowed along with allowable claims 4-6 and 25. Also, as pointed out above, claims 17 and 18, which respectively depend from claims 1 and 4 also are believed allowable.

Allowance of the application and prompt notice of the same is respectfully requested without further delay.

Respectfully submitted,


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